

**A STUDY OF FOOD ALLERGY AND  
INTOLERANCE AND THEIR MANAGEMENT**

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## **Introduction**

Some people experience symptoms of varying intensity when they ingest particular foods. Adverse reactions to food can be classified under two main conditions: FOOD INTOLERANCE and FOOD AVERSION. Food aversion incorporates the psychological aspects of food intolerance. Food intolerance is the term used to describe an abnormal but reproducible, unpleasant or adverse reaction to a specific food or food ingredient and is not psychologically based. Food allergy is a form of food intolerance where there is evidence of an abnormal immunological reaction to food due to sensitization by food antigens which do not provoke reactions in the majority (Lessof, 1984).

A family survey was carried out to study the extent, as well as, other characteristics of food intolerance within a sample of Maltese families.

## **Methodology**

A questionnaire was distributed to 200 families and where applicable, the parents were required to fill in the necessary information for each member of the family. This was completed by 159 families, that is, 79.5% of the total number distributed.

## **Results**

The sample consisted of 709 people, of which 429 were males (60.5%) and 280 were females (39.5%), who came from the different social classes and regions of Malta, as described in the Census '85.

54 people (i.e. 28 males and 26 females) were found to be intolerant of specific foods, giving a prevalence of 7.6% for food intolerance. 63.0% presented with skin manifestations, 29.6% had gastrointestinal symptoms, 18.5% had respiratory symptoms while another 18.5% experienced CNS symptoms. Skin manifestations (n=34) were found to be more commonly experienced in infants and young children (aged 6 years or less) and least in adults (over 21). The same applies to gastrointestinal (n=16) and respiratory (n=10) symptoms. However, CNS symptoms (i.e. migraine) were much more common in adults and in females more than in males (n=10).

As regards the age of onset, 65.4% experienced first symptoms at the age of 6 years or less, 7.7% between the age of 7 - 13 years, 13.5% between the ages 14 - 21 years and 13.5% over 21 years (n=52).

5.73% of infants and young children aged 6 years or less, in this study, experienced adverse food reactions (n=192).

The foods responsible in causing intolerance are shown in Figure 1. Strawberries were the most implicated, followed by bananas and by chocolate. Both single and multiple food intolerance were present. 44.4% experienced adverse reactions to a single food, 29.6% to two foods, 22.2% to three foods and 3.7% to four foods (n=54).

As regards atopy, 35.2% suffered from other allergies; 27.8% from allergic rhinitis and 7.4% from asthma. 17.4% had a family history of suspected food intolerance.

Changes to the diet were carried out by 87.0% of the sample (n=54). 38.9% eliminated the implicated food from their diet while 48.2% reduced their intake of the particular food.

Recovery was greatest in the cases where first symptoms were experienced during infancy and early childhood and least where these occurred during adulthood. Infant, more than 40% of infants with intolerance to food grow out of the problem in two to two and a half years (Ford & Taylor, 1982). Recovery was also related to the organ initially involved in eliciting the clinical response. A much higher recovery rate occurred in the people who experienced skin or gastrointestinal symptoms alone or together.

Some form of symptomatic treatment was carried out by 24 people (44.4%) regarding their food intolerance. Six of these did not remember what was taken. Antihistamines (oral and topical) were used by 5 persons, calamine lotion by 4 persons (children) and topical steroids by another 4 persons. Another 4 people were taking drugs to control their asthma while one person used a topical nasal decongestant. A special milk-free, lactose-free, formula (Wysoy) was given to 4 out of 5 children intolerant to milk, when they were babies.

Health professionals were consulted by only 41 people (75.9%). 37 went to doctors while only 3 asked their pharmacist for advice.

Nutritionists/dieticians were not consulted, while one person turned to a nurse for advice.

The prevalence of breast-feeding in this sample was found to be 61.5% (n=379) with no significant difference in any region but with a significantly higher rate in the highest ranking employees social class (Class I as described by Census '85) at a 5% significance level using the two tailed test for the distribution of proportions. On comparing breast-fed children with non breast-fed children, a higher proportion of the former was found to be free from food intolerance and this was found to be significant using the same statistical test.

## Discussion

The value obtained for the prevalence of food intolerance (7.6%) was found to fit in well, when compared to international studies, where food intolerance was found to affect between 5 - 10% of the population (Loblay & Swain, 1986). Adverse reactions to food are more common in infancy, at which time the gut permeability to intact molecules is the greatest (Lehrer, 1989). From this survey, the prevalence of food intolerance within the 0 - 6 years age group was found to be 5.7% which compared well with that of 4% - 6% obtained in studies carried out abroad (Sampson, 1990).

Virtually all foods can act as antigens within the gut. However, true allergic reactions form only a small part of the reported adverse reactions to food. Some foods are more than others involved in such allergic reactions and these include eggs, cow's milk, shrimp, wheat/flour, peanuts/nuts and beans. From this survey, strawberries were mostly implicated and these are known to have a histamine-releasing effect which can induce symptoms that mimic true food allergy. The actions of vasoactive amines such as tyramine found in bananas and phenylethylamine found in chocolate could also give rise to pseudo-allergic reactions. However, true allergic reactions could still have occurred since the presence of IgE antibodies to a 30kD protein present in certain foods including strawberries and bananas has been shown in the serum of a patient (Wadee et al, 1990). Artificial colours and preservatives could also give rise to intolerance both through an allergic mechanism or via a pharmacological reaction.

Figure 1 illustrates the frequency of adverse reactions caused by each implicated food (where Art.Cl./Pres. stands for Artificial colours/Preservatives)

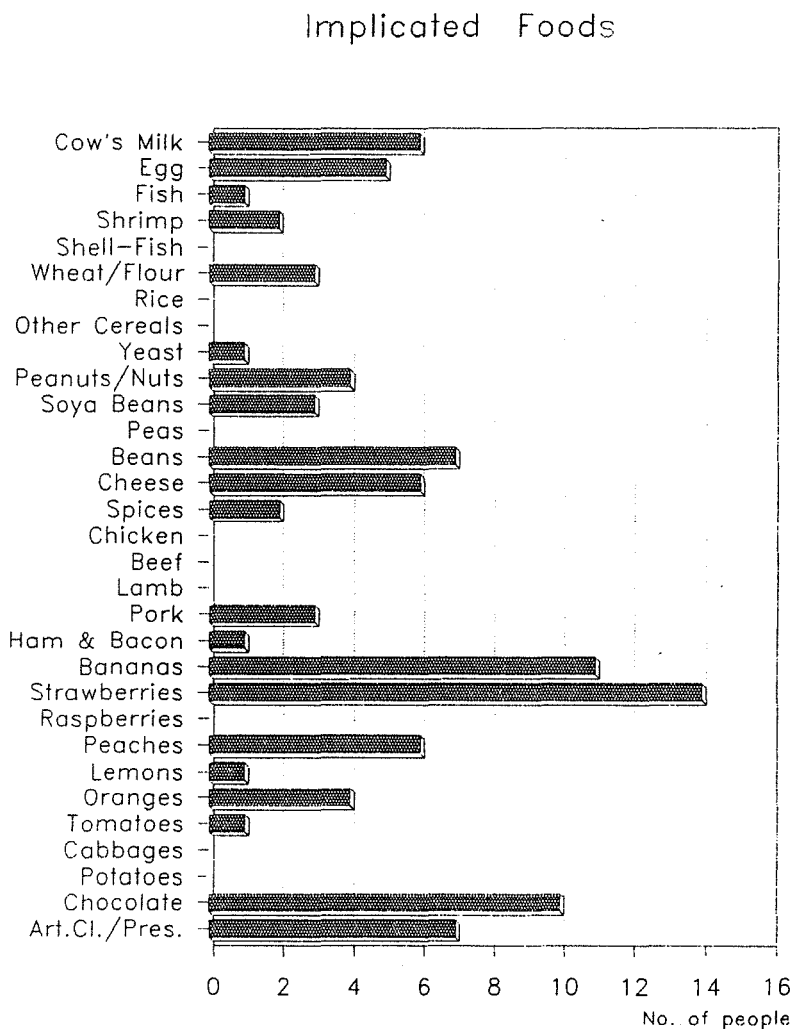


Figure 1 Frequency of adverse reactions caused by each implicated food. (where Art.Cl./Pres. stands for Artificial colours and Preservatives)

## Conclusion

Complete elimination of the implicated food is especially important when a person is diagnosed as being allergic to the food, since only very little amounts will lead to an adverse reaction. If the intolerance is due to some other mechanism, as discussed previously, reduction of the intake of such foods should be enough. Food allergic individuals should thus be advised on the avoidance of such foods/food constituents, as well as, their 'hidden sources'. In this respect, one should recommend better food labelling, as regards product constituents.

If a person has not specifically picked out the food/s involved, he should be advised on keeping a food diary which lists the foods taken and any symptoms so that the causative agent can be more easily identified.

Breast-feeding and delayed introduction of solid foods should be encouraged since studies have shown that these reduce the risk of subsequent food allergy. Breast-feeding should be continued for the first 3 - 6 months and weaning ideally started between 4 - 6 months (Waterston, 1990).

Although, consulted by only a few people in this study, the community pharmacist is in an ideal position to impart this information as well as other advice regarding the symptomatic treatment of such conditions and information on the special formulae available to the patients concerned. As a help, two leaflets have been prepared, one for the community pharmacist and one for the general public.

## References

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